

**Application
Notes**

hp OpenView Storage Mirroring

High Availability for Windows Print Servers

Product Version: 4.3.3

First Edition (May 2004)

Part Number: T2557-88020

This document describes the steps necessary to configure HP OpenView Storage Mirroring to provide high availability for print servers on Windows 2000 Service Pack 3 or earlier.

For the latest version of these Application Notes and other Storage Mirroring documentation, access the HP storage web site at: <http://www.hp.com/country/us/eng/prodserv/storage.html>.



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Printed in USA.

HP Open View Storage Mirroring High Availability for Windows Print Servers Application Notes

Third Edition (May 2004)

Part Number: T2557-88020

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Introduction

This document describes the steps necessary to configure HP OpenView Storage Mirroring to provide high availability for print servers on Windows 2000 Service Pack 3 or earlier. Once this configuration is complete, should a disaster happen to the primary server, the secondary server will automatically failover using HP OpenView Storage Mirroring and the printer server will remain available through the network.

To complete these instructions, you will install and configure HP OpenView Storage Mirroring for replication and failover. Due to the complexities of this application and print servers, this document is intended for network administrators with experience installing, configuring, and maintaining network applications including HP OpenView Storage Mirroring.

Requirements

- ◆ Two servers that meet one of the following operating system requirements:
 - ◆ Microsoft Windows NT 4.0 with Service Pack 4 or later
 - ◆ Microsoft Windows 2000 Service Pack 3 or earlier

NOTE: If you are using Windows 2000 Service Pack 4 or later or Windows 2003, this application note is not necessary. Because the print spooler service is not name sensitive in these operating systems, you do not have to perform any additional failover configuration options nor are any print spooler specific failover or fallback scripts required. See the HP OpenView Storage Mirroring *User's Guide* for the basic steps for configuring failover.

- ◆ Two licensed copies of HP OpenView Storage Mirroring
- ◆ One printer configured and shared on both the production (source) and backup (target) machines
- ◆ The HP OpenView Storage Mirroring Chngname utility

NOTE: The Chngname.exe utility is available from

http://h20000.www2.hp.com/bizsupport/TechSupport/DriverDownload.jsp?pnameOID=415609&locale=en_US&taskId=135&prodSeriesId=359583&prodTypeld=12169&swEnvOID=181#2671

Naming Conventions

HP OpenView Storage Mirroring for Windows provides failover capabilities for multiple source servers to be monitored by and failed over to a single target server. When a source server fails, HP OpenView Storage Mirroring causes the target server to add the failed server's name and IP address. For most applications, this provides nearly instantaneous failover, with no need to reboot the target server, and it allows server-based applications already running on the target server to continue without interruption. When HP OpenView Storage Mirroring performs failover by adding the failed server's name to the existing name of the target this is known as multi-naming since the target machine is actually using multiple names on the network and responding for multiple IP address.

Unlike most client-server applications, the print spooler service on Windows 2000 Service Pack 3 and earlier is sensitive to the primary name of the server on which it is running. With the HP OpenView Storage Mirroring Chngname.exe utility, you are provided the ability to temporarily replace the primary name on the target to make failover of name sensitive services such as print servers possible. Since the print spooler service will only respond to one NetBIOS name after it is started, the target server can only stand in for one source at a time.

NOTE: The print spooler service is not name sensitive in Windows 2000 Service Pack 4 or later or Windows 2003. Therefore, the additional failover configuration steps in this application note are not necessary.

Install Software on the Source and Target

1. Install HP OpenView Storage Mirroring on the source machine using the installation defaults. See the HP OpenView Storage Mirroring *Getting Started* guide for details.
2. Configure and share the network printer on the source machine.
3. Install HP OpenView Storage Mirroring on the target machine using the same installation defaults.
4. Configure and share the network printer on the target machine using the same settings as the source machine.

NOTE: You can use the Print Migrator tool in the Microsoft Resource Kit to simplify the process on the target. See Microsoft Knowledge Base article Q214795 for details on Windows NT or article Q275529 for details on Windows 2000.

Configure Failover and Begin Failure Monitoring

1. If a failure occurs, you will want to have the print spooler start on the target machine automatically. To do this, create a batch file called *postover.bat* using the sample batch file below. Save the batch file to the same directory where your HP OpenView Storage Mirroring files are installed.

POSTOVER.BAT

```
rem This command stops the spooler service so that the active server name of the target  
rem machine can be changed.  
net stop spooler  
  
rem This command delays script processing so that the stop spooler command can be  
rem completed. This command is available from the Windows 2000/NT Resource Kit. If you  
rem do not have the Resource Kit, you will need to determine another method to delay  
rem script processing. This command as executed below will wait for 60 seconds before  
rem continuing. You may need to modify the length of time depending on the speed of your  
rem print spooler.  
sleep 60  
  
rem This command temporarily changes the name of the server. You will need to replace  
rem <drive>:\<directory> with the location of your HP OpenView Storage Mirroring script files and replace  
rem source_name with the name of the source machine. The Chngname utility should be  
rem located in the same directory as the HP OpenView Storage Mirroring script files.  
<drive>:\<directory>\chngname /s source_name  
  
rem This command restarts the spooler service with the name of the source machine.  
net start spooler
```

2. After a failure is resolved, you will be ready to bring your source back online. At this time, you will want to stop the print spooler on the target automatically. To do this, create a batch file called *preback.bat* using the sample batch file below. Save the batch file to the same directory where your HP OpenView Storage Mirroring files are installed.

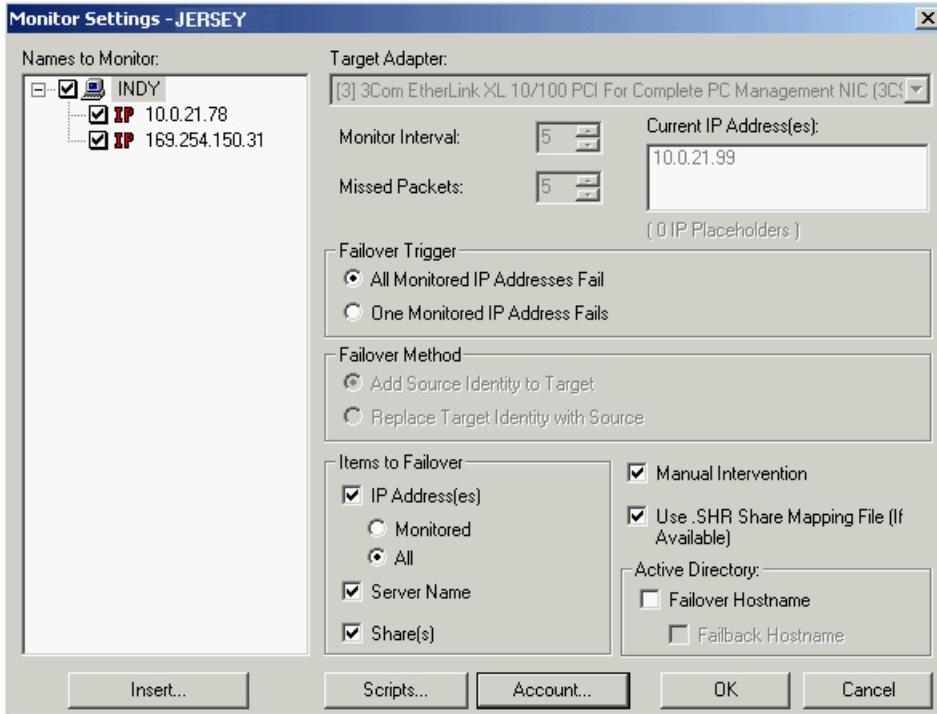
PREBACK.BAT

```
rem This command stops the spooler since it is currently using the source machine's name.  
net stop spooler  
  
rem This command delays script processing so that the stop spooler command can be  
rem completed. This command is available from the Windows 2000/NT Resource Kit. If you  
rem do not have the Resource Kit, you will need to determine another method to delay  
rem script processing. This command as executed below will wait for 60 seconds before  
rem continuing. You may need to modify the length of time depending on the speed of your  
rem print spooler.  
sleep 60  
  
rem This command changes the target name back to its original name so that other network  
rem applications are not impacted. You will need to replace <drive>:\<directory>\ with  
rem the location of your HP OpenView Storage Mirroring script files. The Chngname utility should be located  
rem in the same directory as the HP OpenView Storage Mirroring script files.  
<drive>:\<directory>\chngname /t  
  
rem This command starts the spooler using the target machine name.  
net start spooler
```

NOTE: The Chngname.exe utility is available on the NSI Software web site at www.nsisoftware.com/updates/chngname.htm.

The sample batch files are available on the NSI Software web site at www.nsisoftware.com/download/prntscrp.exe.

3. Select Start, Programs, HP OpenView Storage Mirroring, Failover Control Center.
4. Select the target machine from the list of available machines. If the target you need is not displayed, click Add Target, enter the machine name, and click OK.
5. To add a monitor for the selected target, click Add Monitor. Type the name of the source machine and click OK. The Monitor Settings window will open.
6. In the Monitor Settings window, mark the IP address that is going to failover.



7. Click Scripts and specify the scripts that were created above.
8. Click OK to go back to the Monitor Settings dialog box.
9. If your printer is listed in Windows Active Directory, you will need to select Failover Hostname and Fallback Hostname under Active Directory. Click Account and specify a user account with write access for Active Directory. If your printer is not listed in Active Directory, you can skip this step. (To confirm if your printer is listed in Active Directory, verify if the List in Directory option is enabled on the printer Properties, Sharing tab.)
10. Click OK from the Monitor Setting dialog box to begin monitoring the source machine.

In the event of a source machine failure, your target will stand in for the source and your print server is now completely protected. For information on monitoring failover, see the HP OpenView Storage Mirroring User's Guide.

Restoring Your Print Server

If the source experiences a failure, such as a power, network, or disk failure, your target machine will stand in for the source while you resolve the source machine issues.

1. Verify that your source machine is not connected to the network. If it is, disconnect it.
2. Resolve the source machine problem that caused the failure.

NOTE: If you must rebuild your hard drive, continue with step 3. If you do not need to rebuild your hard drive, continue with step 6 below.

3. Install Windows. Since your source machine is not connected to the network, go ahead and use the source's original name and IP address.
4. Install HP OpenView Storage Mirroring using the installation defaults.
5. Install the print server and configure it exactly as before.
6. Select **Start, Programs, HP OpenView Storage Mirroring, Failover Control Center**.
7. Select the target machine that is currently standing in for the failed source and login.
8. Select the failed source and click **Failback**.
9. You will be prompted to determine if you want to continue monitoring the source server. Do not choose **Continue** or **Stop** at this time.
10. Connect the source machine to the network.
11. After the source is back online, select **Continue** to continue monitoring the source or **Stop** to discontinue monitoring.

If you selected to continue failover monitoring, the target is available to stand in for the source in the event of a failure.